In [ ]:
```
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
```

In [ ]:
```
df = pd.read_csv('taxi-fare.csv')
df.head(10)
```

Out[ ]:

	key	fare_amount	pickup_datetime	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passer
0	2009-06-15 17:26:21.0000001	4.5	2009-06-15 17:26:21+00:00	-73.844311	40.721319	-73.841610	40.712278	
1	2010-01-05 16:52:16.0000002	16.9	2010-01-05 16:52:16+00:00	-74.016048	40.711303	-73.979268	40.782004	
2	2011-08-18 00:35:00.00000049	5.7	2011-08-18 00:35:00+00:00	-73.982738	40.761270	-73.991242	40.750562	
3	2012-04-21 04:30:42.0000001	7.7	2012-04-21 04:30:42+00:00	-73.987130	40.733143	-73.991567	40.758092	
4	2010-03-09 07:51:00.000000135	5.3	2010-03-09 07:51:00+00:00	-73.968095	40.768008	-73.956655	40.783762	
5	2011-01-06 09:50:45.0000002	12.1	2011-01-06 09:50:45+00:00	-74.000964	40.731630	-73.972892	40.758233	
6	2012-11-20 20:35:00.0000001	7.5	2012-11-20 20:35:00+00:00	-73.980002	40.751662	-73.973802	40.764842	
7	2012-01-04 17:22:00.00000081	16.5	2012-01-04 17:22:00+00:00	-73.951300	40.774138	-73.990095	40.751048	
8	2012-12-03 13:10:00.000000125	9.0	2012-12-03 13:10:00+00:00	-74.006462	40.726713	-73.993078	40.731628	
9	2009-09-02 01:11:00.00000083	8.9	2009-09-02 01:11:00+00:00	-73.980658	40.733873	-73.991540	40.758138	

In [ ]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 500000 entries, 0 to 499999
Data columns (total 8 columns):
 #   Column             Non-Null Count   Dtype  
---  ------             --------------   -----  
 0   key                500000 non-null  object 
 1   fare_amount        500000 non-null  float64
 2   pickup_datetime    500000 non-null  object 
 3   pickup_longitude   500000 non-null  float64
 4   pickup_latitude    500000 non-null  float64
 5   dropoff_longitude  499995 non-null  float64
 6   dropoff_latitude   499995 non-null  float64
 7   passenger_count    500000 non-null  int64  
dtypes: float64(5), int64(1), object(2)
memory usage: 30.5+ MB
```

In [ ]:
```
df.isna().sum()
```

Out[ ]:
```
key                  0
fare_amount          0
pickup_datetime      0
pickup_longitude     0
pickup_latitude      0
dropoff_longitude    5
dropoff_latitude     5
passenger_count      0
dtype: int64
```

In [ ]:
```
df.dropna(inplace=True)
```

In [ ]:
```
df['passenger_count'].value_counts()
```

Out[ ]:
```
1    346009
2     73908
5     35322
3     21761
4     10614
6     10590
0      1791
Name: passenger_count, dtype: int64
```

In [ ]:
```
df.corr()
```

```
/tmp/ipykernel_23016/1134722465.py:1: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a future version, it will default to False. Select only valid columns or specify the value of numeric_only to silence this warning.
  df.corr()
```

Out[ ]:

	fare_amount	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passenger_count
fare_amount	1.000000	0.008822	-0.007779	0.009233	-0.007865	0.013823
pickup_longitude	0.008822	1.000000	-0.522516	0.839781	-0.571343	-0.002501
pickup_latitude	-0.007779	-0.522516	1.000000	-0.604772	0.611882	0.001567
dropoff_longitude	0.009233	0.839781	-0.604772	1.000000	-0.484829	-0.001761
dropoff_latitude	-0.007865	-0.571343	0.611882	-0.484829	1.000000	0.001438
passenger_count	0.013823	-0.002501	0.001567	-0.001761	0.001438	1.000000

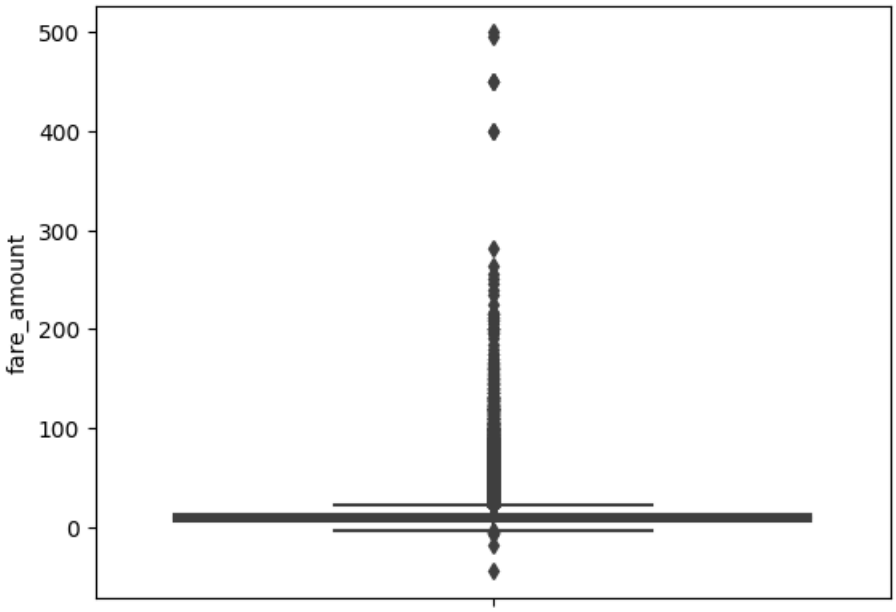
In [ ]:
```
df.describe()
```

Out[ ]:

	fare_amount	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passenger_count
count	499995.000000	499995.000000	499995.000000	499995.000000	499995.000000	499995.000000
mean	11.358182	-72.520091	39.920350	-72.522435	39.916526	1.683445
std	9.916069	11.856446	8.073318	11.797362	7.391002	1.307391
min	-44.900000	-2986.242495	-3116.285383	-3383.296608	-2559.748913	0.000000
25%	6.000000	-73.992047	40.734916	-73.991382	40.734057	1.000000
50%	8.500000	-73.981785	40.752670	-73.980126	40.753152	1.000000
75%	12.500000	-73.967117	40.767076	-73.963572	40.768135	2.000000
max	500.000000	2140.601160	1703.092772	40.851027	404.616667	6.000000

In [ ]:
```
sns.boxplot(y = df['fare_amount'])
```

Out[ ]:
```
<Axes: ylabel='fare_amount'>
```



In [ ]:
```
df2 = df[(df['fare_amount'] > 0) & (df['fare_amount'] <=160)]
```

In [ ]:
```
df2['passenger_count'].value_counts()
```

Out[ ]:
```
1    345945
2     73896
5     35321
3     21758
4     10611
6     10589
0      1791
Name: passenger_count, dtype: int64
```

1st model - fare 0-160

2nd model - 160-300

3rd all data

4th 25% sample

In [ ]:
```
df2[df2['passenger_count'] == 0].describe()
```

Out[ ]:

	fare_amount	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passenger_count
count	1791.000000	1791.000000	1791.000000	1791.000000	1791.000000	1791.0
mean	8.964629	-72.738462	40.069210	-72.777412	40.092268	0.0
std	6.275889	9.496606	5.231404	9.339345	5.145007	0.0
min	2.500000	-74.031985	0.000000	-74.031987	0.000000	0.0
25%	5.300000	-73.991896	40.735658	-73.991600	40.734550	0.0
50%	7.300000	-73.981877	40.753567	-73.980195	40.753282	0.0
75%	10.500000	-73.968050	40.767477	-73.963800	40.769100	0.0
max	89.250000	0.000000	40.869400	0.000000	41.005684	0.0

In [ ]:
```
df2['passenger_count'].replace(to_replace=0, value=1, inplace=True)
```

```
/tmp/ipykernel_23016/2429518419.py:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#retu
rning-a-view-versus-a-copy
  df2['passenger_count'].replace(to_replace=0, value=1, inplace=True)
```

In [ ]:
```
nyc_min_longitude = -74.05
nyc_max_longitude = -73.75

# range of latitude for NYC
nyc_min_latitude = 40.63
nyc_max_latitude = 40.85
```

In [ ]:
```
df3 = df2[(df2['pickup_longitude'] > nyc_min_longitude) & (df2['pickup_longitude'] < nyc_max_longitude )]
df3 = df3[(df3['pickup_latitude'] > nyc_min_latitude) & (df3['pickup_latitude'] < nyc_max_latitude )]
```

In [ ]:
```
df3
```

Out[ ]:

	key	fare_amount	pickup_datetime	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	p
0	2009-06-15 17:26:21.0000001	4.5	2009-06-15 17:26:21+00:00	-73.844311	40.721319	-73.841610	40.712278	
1	2010-01-05 16:52:16.0000002	16.9	2010-01-05 16:52:16+00:00	-74.016048	40.711303	-73.979268	40.782004	
2	2011-08-18 00:35:00.00000049	5.7	2011-08-18 00:35:00+00:00	-73.982738	40.761270	-73.991242	40.750562	
3	2012-04-21 04:30:42.0000001	7.7	2012-04-21 04:30:42+00:00	-73.987130	40.733143	-73.991567	40.758092	
4	2010-03-09 07:51:00.000000135	5.3	2010-03-09 07:51:00+00:00	-73.968095	40.768008	-73.956655	40.783762	
...	...	...	...	...	...	...	...	...
499995	2015-05-07 18:45:12.0000004	7.0	2015-05-07 18:45:12+00:00	-73.978775	40.766724	-73.966072	40.758537	
499996	2010-09-13 12:11:34.0000004	13.7	2010-09-13 12:11:34+00:00	-74.002932	40.718408	-74.009442	40.710952	
499997	2014-08-25 00:22:20.0000001	25.0	2014-08-25 00:22:20+00:00	-73.983885	40.725611	-73.896482	40.700980	
499998	2015-01-12 12:17:32.0000001	6.5	2015-01-12 12:17:32+00:00	-73.974617	40.756512	-73.970184	40.764801	
499999	2010-04-12 23:46:58.0000002	4.9	2010-04-12 23:46:58+00:00	-73.986743	40.722187	-73.982768	40.713330	

488703 rows × 8 columns

In [ ]:
```
df3['pickup_datetime']= pd.to_datetime(df3['pickup_datetime'])
```

In [ ]:
```
df3['year'] = df3['pickup_datetime'].dt.year
df3['month'] = df3['pickup_datetime'].dt.month
```

```
df3['day'] = df3['pickup_datetime'].dt.day
df3['day of week'] = df3['pickup_datetime'].dt.day_of_week
df3['hour'] = df3['pickup_datetime'].dt.hour
df3.drop('pickup_datetime', axis=1, inplace=True)
```

In [ ]:
```
df3
```

Out[ ]:

	key	fare_amount	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passenger_count
0	2009-06-15 17:26:21.0000001	4.5	-73.844311	40.721319	-73.841610	40.712278	1
1	2010-01-05 16:52:16.0000002	16.9	-74.016048	40.711303	-73.979268	40.782004	1
2	2011-08-18 00:35:00.00000049	5.7	-73.982738	40.761270	-73.991242	40.750562	2
3	2012-04-21 04:30:42.0000001	7.7	-73.987130	40.733143	-73.991567	40.758092	1
4	2010-03-09 07:51:00.000000135	5.3	-73.968095	40.768008	-73.956655	40.783762	1
...	...	...	...	...	...	...	...
499995	2015-05-07 18:45:12.0000004	7.0	-73.978775	40.766724	-73.966072	40.758537	1
499996	2010-09-13 12:11:34.0000004	13.7	-74.002932	40.718408	-74.009442	40.710952	1
499997	2014-08-25 00:22:20.0000001	25.0	-73.983885	40.725611	-73.896482	40.700980	1
499998	2015-01-12 12:17:32.0000001	6.5	-73.974617	40.756512	-73.970184	40.764801	6
499999	2010-04-12 23:46:58.0000002	4.9	-73.986743	40.722187	-73.982768	40.713330	1

488703 rows × 12 columns

In [ ]:
```
df3.corr()
```

```
/tmp/ipykernel_23016/3136175663.py:1: FutureWarning: The default value of numeric_only in DataFrame.corr is deprecated. In a future version, it will default to False. Select only valid columns or specify the value of numeric_only to silence this warning.
  df3.corr()
```

Out[ ]:

	fare_amount	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passenger_count	year
fare_amount	1.000000	0.431605	-0.222877	0.009718	-0.013162	0.015990	0.120157
pickup_longitude	0.431605	1.000000	-0.046625	0.010491	-0.009583	0.003377	0.013790
pickup_latitude	-0.222877	-0.046625	1.000000	-0.002731	0.011872	-0.006963	-0.012782
dropoff_longitude	0.009718	0.010491	-0.002731	1.000000	-0.505002	0.000859	0.015257
dropoff_latitude	-0.013162	-0.009583	0.011872	-0.505002	1.000000	-0.002469	-0.018941
passenger_count	0.015990	0.003377	-0.006963	0.000859	-0.002469	1.000000	0.006077
year	0.120157	0.013790	-0.012782	0.015257	-0.018941	0.006077	1.000000
month	0.025585	0.005305	-0.006774	0.001760	-0.000553	0.004340	-0.117328
day	0.001940	0.000541	-0.001504	-0.002382	0.001167	0.005163	-0.009755
day of week	0.003444	-0.023986	-0.040866	-0.000341	-0.001101	0.037316	0.010471
hour	-0.019087	0.017627	0.030015	-0.002375	0.001321	0.015659	0.002573

In [ ]:
```
def euc_dist(lat_start, lon_start, lat_end, lon_end):
    dist = (((lat_end - lat_start) ** 2) + ((lon_end - lon_start) ** 2)) ** 0.5
    return dist
```

In [ ]:
```
df3['distance'] = euc_dist(df3['pickup_latitude'], df3['pickup_longitude'], df3['dropoff_latitude'], df3['dropo
```

In [ ]:
```
df3
```

Out[ ]:

	key	fare_amount	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passenger_count
0	2009-06-15 17:26:21.0000001	4.5	-73.844311	40.721319	-73.841610	40.712278	1
1	2010-01-05 16:52:16.0000002	16.9	-74.016048	40.711303	-73.979268	40.782004	1
2	2011-08-18 00:35:00.00000049	5.7	-73.982738	40.761270	-73.991242	40.750562	2
3	2012-04-21 04:30:42.0000001	7.7	-73.987130	40.733143	-73.991567	40.758092	1
4	2010-03-09 07:51:00.000000135	5.3	-73.968095	40.768008	-73.956655	40.783762	1
...	...	...	...	...	...	...	...
499995	2015-05-07 18:45:12.0000004	7.0	-73.978775	40.766724	-73.966072	40.758537	1
499996	2010-09-13 12:11:34.0000004	13.7	-74.002932	40.718408	-74.009442	40.710952	1
499997	2014-08-25 00:22:20.0000001	25.0	-73.983885	40.725611	-73.896482	40.700980	1
499998	2015-01-12 12:17:32.0000001	6.5	-73.974617	40.756512	-73.970184	40.764801	6
499999	2010-04-12 23:46:58.0000002	4.9	-73.986743	40.722187	-73.982768	40.713330	1

488703 rows × 13 columns

In [ ]:
```
df3.corr()
```

```
/tmp/ipykernel_23016/3136175663.py:1: FutureWarning: The default value of numeric_only in DataFrame.corr is depr
ecated. In a future version, it will default to False. Select only valid columns or specify the value of numeric
_only to silence this warning.
  df3.corr()
```

Out[ ]:

	fare_amount	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passenger_count	year
fare_amount	1.000000	0.431605	-0.222877	0.009718	-0.013162	0.015990	0.120157
pickup_longitude	0.431605	1.000000	-0.046625	0.010491	-0.009583	0.003377	0.013790
pickup_latitude	-0.222877	-0.046625	1.000000	-0.002731	0.011872	-0.006963	-0.012782
dropoff_longitude	0.009718	0.010491	-0.002731	1.000000	-0.505002	0.000859	0.015257
dropoff_latitude	-0.013162	-0.009583	0.011872	-0.505002	1.000000	-0.002469	-0.018941
passenger_count	0.015990	0.003377	-0.006963	0.000859	-0.002469	1.000000	0.006077
year	0.120157	0.013790	-0.012782	0.015257	-0.018941	0.006077	1.000000
month	0.025585	0.005305	-0.006774	0.001760	-0.000553	0.004340	-0.117328
day	0.001940	0.000541	-0.001504	-0.002382	0.001167	0.005163	-0.009755
day of week	0.003444	-0.023986	-0.040866	-0.000341	-0.001101	0.037316	0.010471
hour	-0.019087	0.017627	0.030015	-0.002375	0.001321	0.015659	0.002573
distance	0.019877	0.011391	-0.008421	-0.011991	-0.381816	0.001762	0.016156

JFK to pickup & drop

NYK, LWG

In [ ]:
```
airports = {'JFK_Airport': (-73.78,40.643),
            'Laguardia_Airport': (-73.87, 40.77),
            'Newark_Airport' : (-74.18, 40.69)}
for airport in airports:
    df3['pickup_dist_' + airport] = euc_dist(df3['pickup_latitude'], df3['pickup_longitude'], airports[airport]
    df3['dropoff_dist_' + airport] = euc_dist(df3['dropoff_latitude'], df3['dropoff_longitude'], airports[airpo
```

In [ ]:
```
x = df3[['pickup_longitude', 'pickup_latitude',
       'dropoff_longitude', 'dropoff_latitude', 'passenger_count', 'year',
       'month', 'day', 'day of week', 'hour', 'distance',
       'pickup_dist_JFK_Airport', 'dropoff_dist_JFK_Airport',
```

```
       'pickup_dist_Laguardia_Airport', 'dropoff_dist_Laguardia_Airport',
       'pickup_dist_Newark_Airport', 'dropoff_dist_Newark_Airport']]
y = df3['fare_amount']
```

In [ ]:
```
x
```

Out[ ]:

	pickup_longitude	pickup_latitude	dropoff_longitude	dropoff_latitude	passenger_count	year	month	day	day of week	hour	c
0	-73.844311	40.721319	-73.841610	40.712278	1	2009	6	15	0	17	0
1	-74.016048	40.711303	-73.979268	40.782004	1	2010	1	5	1	16	0
2	-73.982738	40.761270	-73.991242	40.750562	2	2011	8	18	3	0	0
3	-73.987130	40.733143	-73.991567	40.758092	1	2012	4	21	5	4	0
4	-73.968095	40.768008	-73.956655	40.783762	1	2010	3	9	1	7	0
...	...	...	...	...	...	...	...	...	...	...	
499995	-73.978775	40.766724	-73.966072	40.758537	1	2015	5	7	3	18	0
499996	-74.002932	40.718408	-74.009442	40.710952	1	2010	9	13	0	12	0
499997	-73.983885	40.725611	-73.896482	40.700980	1	2014	8	25	0	0	0
499998	-73.974617	40.756512	-73.970184	40.764801	6	2015	1	12	0	12	0
499999	-73.986743	40.722187	-73.982768	40.713330	1	2010	4	12	0	23	0

488703 rows × 17 columns

In [ ]:
```
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import MinMaxScaler
from sklearn.metrics import mean_squared_error, accuracy_score
```

In [ ]:
```
x_train, x_test, y_train, y_test = train_test_split(x, y, test_size=0.2, random_state = 134)
```

In [ ]:
```
minmax = MinMaxScaler(feature_range=(0,1))
x_train = minmax.fit_transform(x_train)
x_test = minmax.transform(x_test)
```

In [ ]:
```
from sklearn.ensemble import RandomForestRegressor
```

In [ ]:
```
rf = RandomForestRegressor(max_depth=16)
rf.fit(x_train, y_train)
y_pred_rf = rf.predict(x_test)
```

In [ ]:
```
y_pred_rf
```

Out[ ]:
```
array([ 9.23298733,  9.23298733,  7.77868921, ...,  7.77868921,
       16.23277175, 27.90476449])
```

In [ ]:
```
mean_squared_error(y_pred_rf, y_test) ** 0.5
```

Out[ ]:
```
4.472567718660521
```

In [ ]:
```
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Dense, Dropout
```

In [ ]:
```
model1 = Sequential()
model1.add(Dense(64, input_shape = (17,), activation = "relu"))
model1.add(Dense(64, activation = "relu"))
model1.add(Dropout(0.2))
model1.add(Dense(64, activation = "relu"))
model1.add(Dropout(0.2))
model1.add(Dense(64,activation = "relu"))
model1.add(Dense(1, activation = None))
model1.compile(optimizer = "adam", loss = "mean_squared_error")
model1.fit(x_train, y_train, epochs = 50)
```

```
Epoch 1/50
 1265/12218 [==>.....................] - ETA: 20s - loss: 71.4974
```

```
---------------------------------------------------------------------------
KeyboardInterrupt                         Traceback (most recent call last)
Cell In[289], line 10
      8 model1.add(Dense(1, activation = None))
      9 model1.compile(optimizer = "adam", loss = "mean_squared_error")
---> 10 model1.fit(x_train, y_train, epochs = 50)

File ~/.local/lib/python3.10/site-packages/keras/utils/traceback_utils.py:65, in filter_traceback.<locals>.error
_handler(*args, **kwargs)
     63 filtered_tb = None
     64 try:
---> 65     return fn(*args, **kwargs)
     66 except Exception as e:
     67     filtered_tb = _process_traceback_frames(e.__traceback__)

File ~/.local/lib/python3.10/site-packages/keras/engine/training.py:1650, in Model.fit(self, x, y, batch_size, e
pochs, verbose, callbacks, validation_split, validation_data, shuffle, class_weight, sample_weight, initial_epoc
h, steps_per_epoch, validation_steps, validation_batch_size, validation_freq, max_queue_size, workers, use_multi
processing)
   1642 with tf.profiler.experimental.Trace(
   1643     "train",
   1644     epoch_num=epoch,
   (...)
   1647     _r=1,
   1648 ):
   1649     callbacks.on_train_batch_begin(step)
-> 1650     tmp_logs = self.train_function(iterator)
   1651     if data_handler.should_sync:
   1652         context.async_wait()

File ~/.local/lib/python3.10/site-packages/tensorflow/python/util/traceback_utils.py:150, in filter_traceback.<l
ocals>.error_handler(*args, **kwargs)
    148 filtered_tb = None
    149 try:
--> 150   return fn(*args, **kwargs)
    151 except Exception as e:
    152   filtered_tb = _process_traceback_frames(e.__traceback__)

File ~/.local/lib/python3.10/site-packages/tensorflow/python/eager/polymorphic_function/polymorphic_function.py:
880, in Function.__call__(self, *args, **kwds)
    877 compiler = "xla" if self._jit_compile else "nonXla"
    879 with OptionalXlaContext(self._jit_compile):
--> 880   result = self._call(*args, **kwds)
    882 new_tracing_count = self.experimental_get_tracing_count()
    883 without_tracing = (tracing_count == new_tracing_count)

File ~/.local/lib/python3.10/site-packages/tensorflow/python/eager/polymorphic_function/polymorphic_function.py:
912, in Function._call(self, *args, **kwds)
    909   self._lock.release()
    910   # In this case we have created variables on the first call, so we run the
    911   # defunned version which is guaranteed to never create variables.
--> 912   return self._no_variable_creation_fn(*args, **kwds)  # pylint: disable=not-callable
    913 elif self._variable_creation_fn is not None:
    914   # Release the lock early so that multiple threads can perform the call
    915   # in parallel.
    916   self._lock.release()

File ~/.local/lib/python3.10/site-packages/tensorflow/python/eager/polymorphic_function/tracing_compiler.py:134,
in TracingCompiler.__call__(self, *args, **kwargs)
    131 with self._lock:
    132   (concrete_function,
    133    filtered_flat_args) = self._maybe_define_function(args, kwargs)
--> 134 return concrete_function._call_flat(
    135     filtered_flat_args, captured_inputs=concrete_function.captured_inputs)

File ~/.local/lib/python3.10/site-packages/tensorflow/python/eager/polymorphic_function/monomorphic_function.py:
1745, in ConcreteFunction._call_flat(self, args, captured_inputs, cancellation_manager)
   1741 possible_gradient_type = gradients_util.PossibleTapeGradientTypes(args)
   1742 if (possible_gradient_type == gradients_util.POSSIBLE_GRADIENT_TYPES_NONE
   1743     and executing_eagerly):
   1744   # No tape is watching; skip to running the function.
-> 1745   return self._build_call_outputs(self._inference_function.call(
   1746       ctx, args, cancellation_manager=cancellation_manager))
   1747 forward_backward = self._select_forward_and_backward_functions(
   1748     args,
   1749     possible_gradient_type,
   1750     executing_eagerly)
   1751 forward_function, args_with_tangents = forward_backward.forward()

File ~/.local/lib/python3.10/site-packages/tensorflow/python/eager/polymorphic_function/monomorphic_function.py:
378, in _EagerDefinedFunction.call(self, ctx, args, cancellation_manager)
    376 with _InterpolateFunctionError(self):
```

```
    377   if cancellation_manager is None:
--> 378     outputs = execute.execute(
    379         str(self.signature.name),
    380         num_outputs=self._num_outputs,
    381         inputs=args,
    382         attrs=attrs,
    383         ctx=ctx)
    384   else:
    385     outputs = execute.execute_with_cancellation(
    386         str(self.signature.name),
    387         num_outputs=self._num_outputs,
   (...)
    390         ctx=ctx,
    391         cancellation_manager=cancellation_manager)

File ~/.local/lib/python3.10/site-packages/tensorflow/python/eager/execute.py:52, in quick_execute(op_name, num_
outputs, inputs, attrs, ctx, name)
     50 try:
     51   ctx.ensure_initialized()
---> 52   tensors = pywrap_tfe.TFE_Py_Execute(ctx._handle, device_name, op_name,
     53                                       inputs, attrs, num_outputs)
     54 except core._NotOkStatusException as e:
     55   if name is not None:

KeyboardInterrupt:
```

In [ ]:
```
model1.evaluate(x_test, y_test)
```

```
3055/3055 [==============================] - 4s 1ms/step - loss: 37.5118
```

Out[ ]:
```
37.51178741455078
```

In [ ]:
```

```